The SUCELLOG Project
Triggering the creation of biomass logistic centres by the agro-industry

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WIP Renewable Energies

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Background

European energy scenario needs

New solid biofuels to fulfil demand

European agricultural sector needs

To diversify business activity

Take advantage of important SYNERGIES between bio-economy and the agro-industry sector

- Compatibity with existing equipment/facilities for conditioning of raw biomass
- Work under seasonal regime
- They produce residues or surrounded by residues
- Experience with organic feedstocks
- Concern about product quality

Let's adapt agro-industries to operate as logistic centres of quality solid biofuels with low investment costs

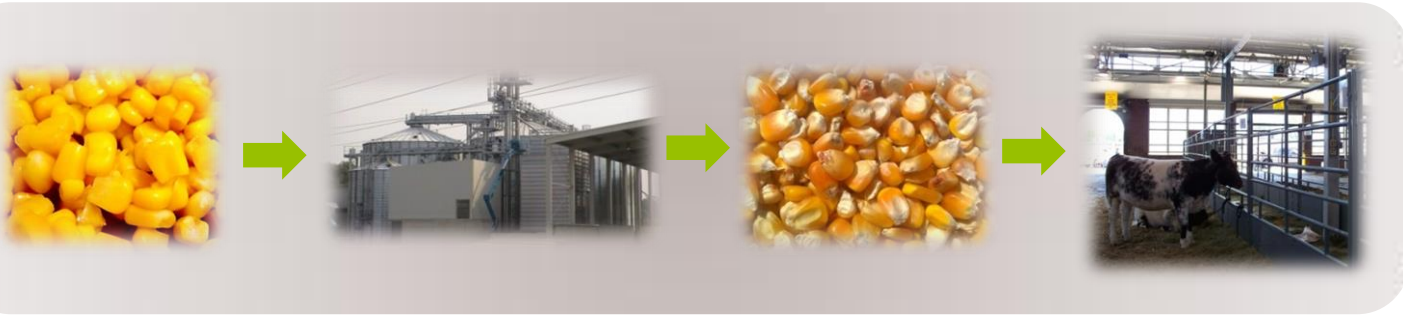
Project concept

- Compatibity with existing equipment/ facilities for conditioning of raw biomass
- Agricultural cooperatives produce biomass residues or have easy access to residues
- Work under seasonal regime

Project concept

AGRO-INDUSTRIES as SEASONAL BIOMASS LOGISTIC CENTRE

Usual operation (Nov-Feb)



Operation as biomass logistic centre (Mar-Oct)

Objectives and main steps

SUCELLOG goal is to **foster the participation of the agrarian sector in the supply of sustainable solid biofuels**.

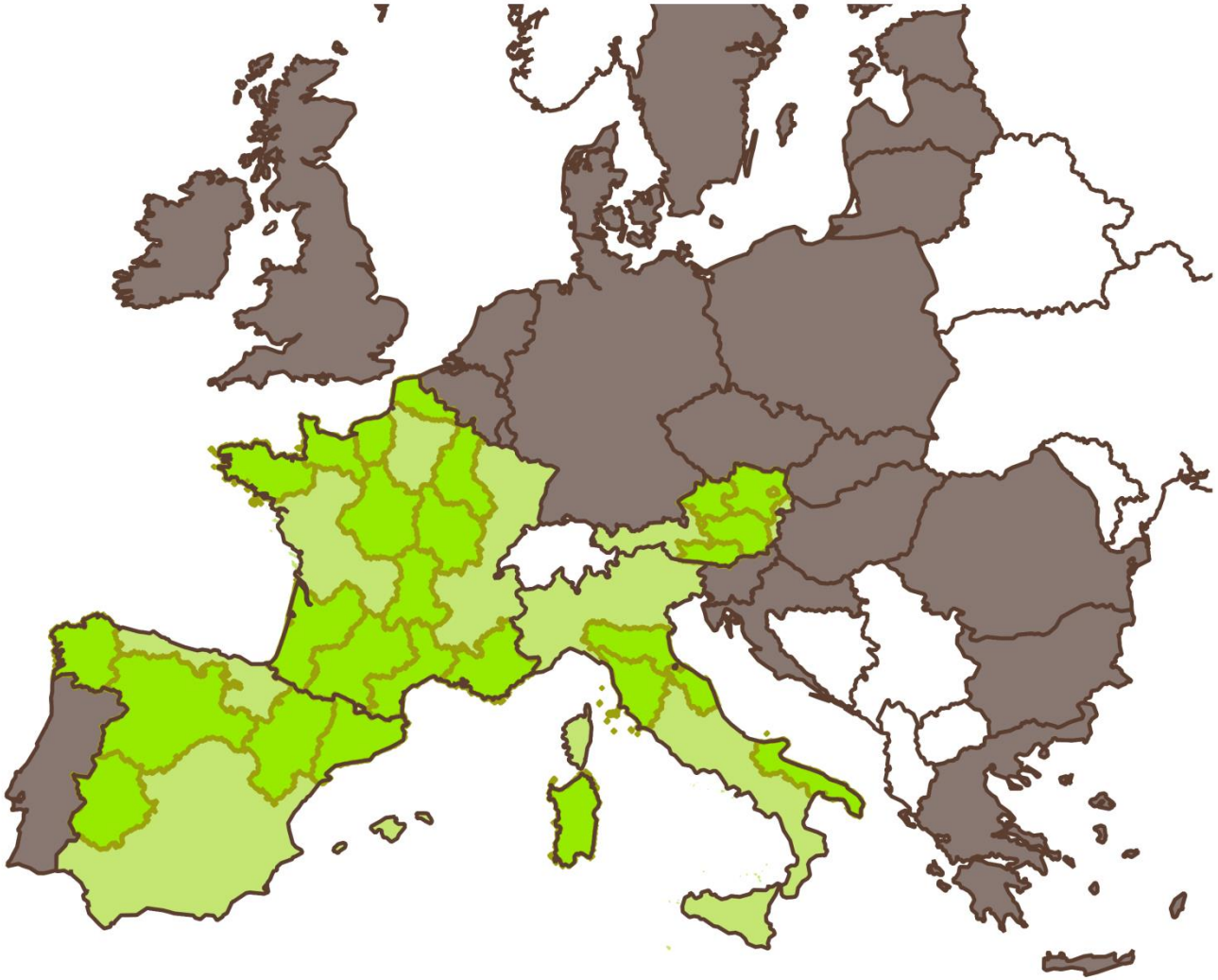
SUCELLOG will make it by:

- **Providing technical support, helping decision-making and accompanying agro-industries** willing to start operating as solid biofuel logistic centres.

- **Creating capacity building** in regional and national agrarian associations to provide this service to their associates beyond the end of the project.

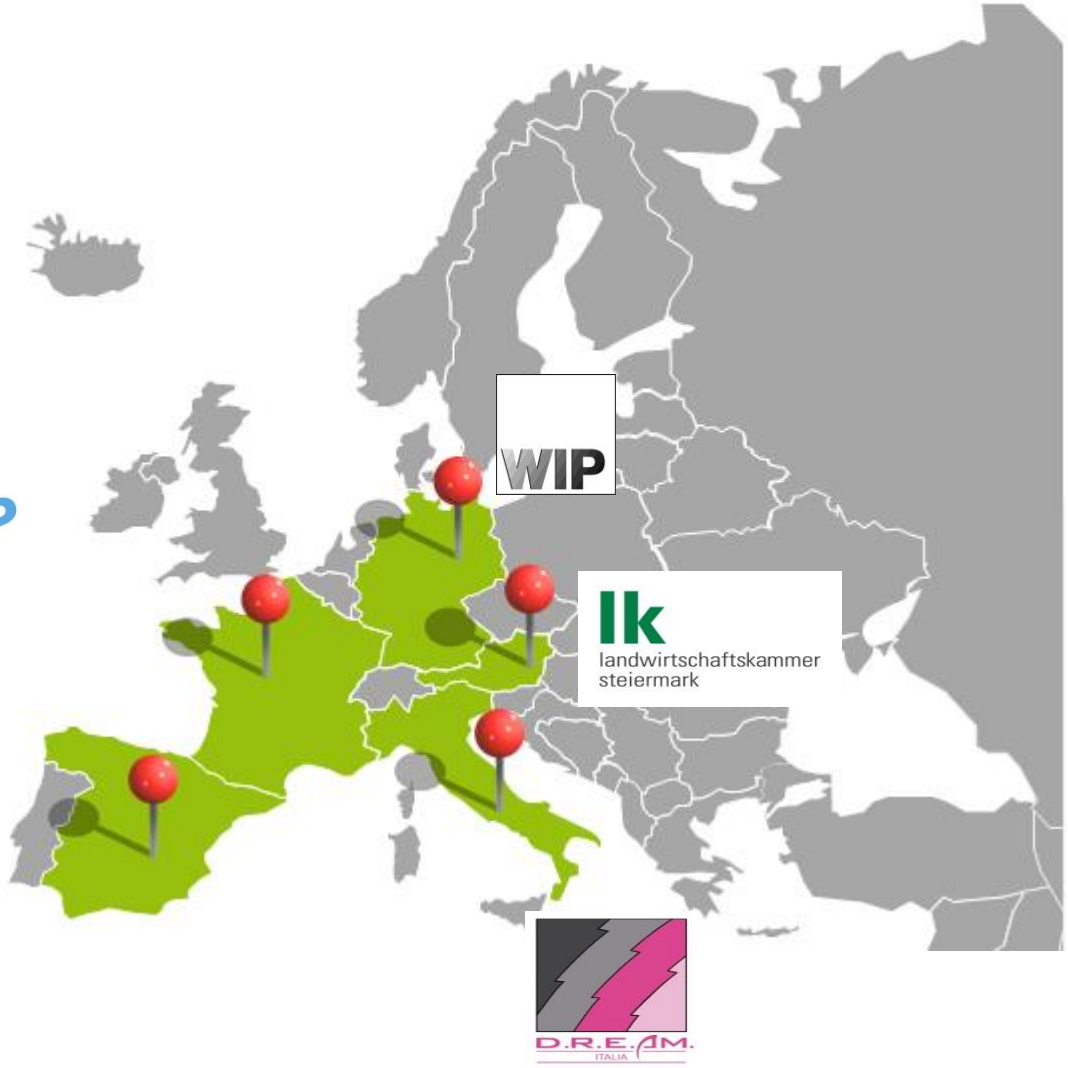
Main areas of interest: Spain, France, Italy and Austria

SUCELLOG Regions



Partnership

sucellog



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AND CONSUMPTION

agri-food cooperatives
Spain
>we are future

Main activities and current results

1. Evaluation of regional framework conditions and stakeholder engagement

- ✓ Assessment of available biomass resources and their geographical location
- ✓ Determination of potential areas for the development of agro-industry logistic centres

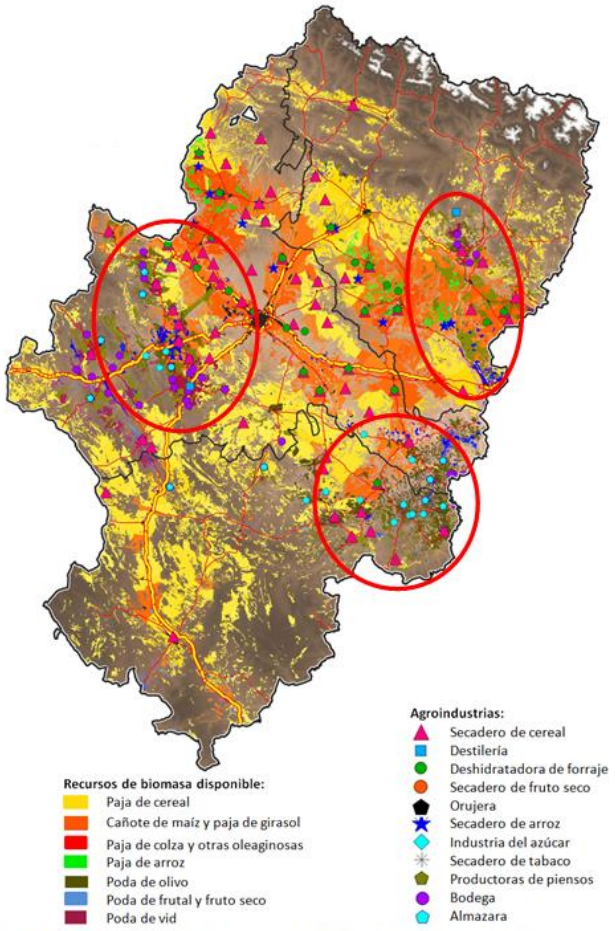

Figura 2: Localización y tipo de agroindustrias y recursos en Aragón.

Main activities and current results

1. **Evaluation of regional framework conditions and stakeholder engagement**

- ✓ Evaluation of both technical and non-technical barriers for the implementation of SUCELLOG concept in the agro-industries
- ✓ Engagement of agro-industries to the project

Selection of 4 agro-industries (category 1)

Main activities and current results

2. Development of tailor-made business model

The SUCELLOG project provides **full support for 4 agro-industries in Europe to become biomass logistic centres using agricultural residues as raw material**. A feasibility study and a complete business model have been conducted for them.

The selected agro-industries are:

- **Cooperativa Agraria San Miguel** - Aragón region - Spain
- **Luzéal-Saint Rémy** – Champagne-Ardenne region - France
- **Società Cooperativa Agricola Le Rene s.r.l.** – Toscana region – Italy
- **Tschiggerl Agrar Gmbh** – Styria region – Austria

Main activities and current results

2. Development of tailor-made business model

- ✓ Biomass procurement & compettitiveness with other uses
- ✓ Solid biomass market and consumers assessment in the area
- ✓ Assessment of existing equipment and human resources capacities
- ✓ Analysis of present management and business plan

- ○ Technical, economic and sustainable feasibility of the logistic centre
- ○ Development of a tailor-made business model

Case study in Spain

Cooperativa Agraria San Miguel, Spain

Current activities	Existing equipment that can be used	Available agrarian residues	Outcomes of the feasibility study	Outcomes of the market assessment
Production of fodder pellets and bales from alfalfa Cereal drying (mainly maize) Production of fodder pellets from agro-industrial food residues	Two alfalfa production lines can be used for the pre-treatment of the solid biomass	Cereal straw >11,000 t/year Maize stalks >8,000 t/year	Straw is the most interesting raw material Blending with wood is required The most competitive product is a Class B agro-pellet with a maximum 70% share of straw	Price of the product: • 117 €/t • 0.027 €/kWh The price is positioned in the middle range local solid biomass market Secondary benefits should be offered to consumers: • ash as low-cost fertiliser, • reduction of Cl content of the soil

Recommended business strategy

Development of internal self-consumption chain targeted on the pig farmers (the members for cooperative) – being the suppliers of the straw and the consumers of the solid biomass. Biomass logistic centre should purchase the straw from pig farmers only under the condition that as well the annual or plurennial agro-pellet sale contracts are made.

Current activities in Spain

- Pelletizing tests have been performed using two different mixtures:
  - 70% straw/30% wood
  - 50% straw/50% wood

- Combustion tests have been performed in several surrounding pig farms using existing boilers (originally designed for combustion of wood pellets and olive pits) finding some performance problems.

- Current test are being carried out in different boiler models adapted to agrarian fuels in collaboration with boiler manufacturers.

Case study in Austria

Tchiggerl Agrar GmbH, Austria

Current activities	Existing equipment that can be used	Available agrarian residues	Outcomes of the feasibility study	Outcomes of the market assessment
Corn harvesting, treatment and trading Logistic operating of straw Pelletizing of corn cobs and straw for animal feeding and bedding	Drying facility that is currently used for drying the cobs (afterwards used in animal bedding)	Cereal straw 5,190 t/year Hay 200 t/year Corn cobs 15,249 t/year	Corn cobs are the most interesting raw material due to the lack of competitive uses	Only corn cob-derived products are feasible. Grits offer large potential market and chance of good profit. Price of the corn cob products: Loose cobs • 58 €/t • 0.017 €/kWh Grits • 144 €/t • 0.038 €/kWh Pellets • 192 €/t • 0.044 €/kWh

Recommended business strategy

The main consumers are expected to be farms and industries using wood chips and pellets. The market would be extended to households, but they are currently not allowed to use corn cobs by law in Styria. The best strategy for the company would be also to produce a small amount of corn cob pellets to be proposed to the consumers as test products in order to facilitate the transition to grits.

Current activities in Austria

- Biomass logistic centre started operation end of 2015
- Fuel production tests have been performed. In general it works well with some minor issues to be solved.
- Combustion tests have been performed in several surrounding farms using existing boilers (originally designed for combustion of wood pellets and wood chips).

Main activities and current results

3. **Creation and monitoring of the agro-industry logistic centres**
4. **Auditing services and start-up diagnosis**

- Facilitate the decision making to agro-industries in becoming an agro-industry logistic centre
- 20 beneficiaries /country
  - 10 (Category 2) → feasibility study and full audit
  - 10 (Category 3) → start-up diagnosis

Beneficiary Category 2: alreday aware about their possibilities to start a new business as a biomass logistic centre

Beneficiary Category 3: do not have experience and awareness about the role they can play as solid biomass providers

Main activities and current results

5. Transfer of knowledge

- 3 Hanbooks: → beginners (Category 3)
  → medium aware users (Category 2)
  → highly aware users (Category 1)

- Building capacity for NAAs and RAAs in the target regions and in other countries concerning the auditing service.

Trainings to agrarian sector

Regional agrarian associations have received specific training on how to make technical and economic feasibility study of an agro-industry willing to become a biomass logistic centre:

- 9 & 14 February 2016 in Paris, France
- 4 March 2016 in Böheimkirchen, Austria
- 29 - 30 March 2016 in Valladolid, Spain
- 20-22 April2016 in Florence, Italy

In September-October, 2016 3 days training course will be organised by CIRCE for AGRARIAN ASSOCIATIONS in EU-28.

The training will include following topics:

- Concept of logistic centre
- Experiences in Europe
- How to support an agro-industry willing to become a logistic centre

Make your request: http://www.sucellogconsultationtool.com

Results up to now: Are you interested in?

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Knowing the potential of available biomass in your region and the existing agro-industries compatible with the production of solid biomass?

DOWNLOAD THE REPORT ON REGIONAL SITUATION, BIOMASS RESOURCES AND PRIORITY AREAS

Understand the key messages to bear in mind when evaluating the possibility to become a biomass logistic centre?

DOWNLOAD THE 1st HANDBOOK

ALREADY AVAILABLE AT

www.sucellog.eu

Available languages:
DE, EN, ES, FR, IT

Check your potential to become an agro-industry logistic centre?
DOWNLOAD DIAGNOSIS GUIDE

Consult real feasibility studies made to 4 agro-industries that benefit from our services?

DOWNLOAD FEASIBILITY STUDIES & BUSINESS MODELS

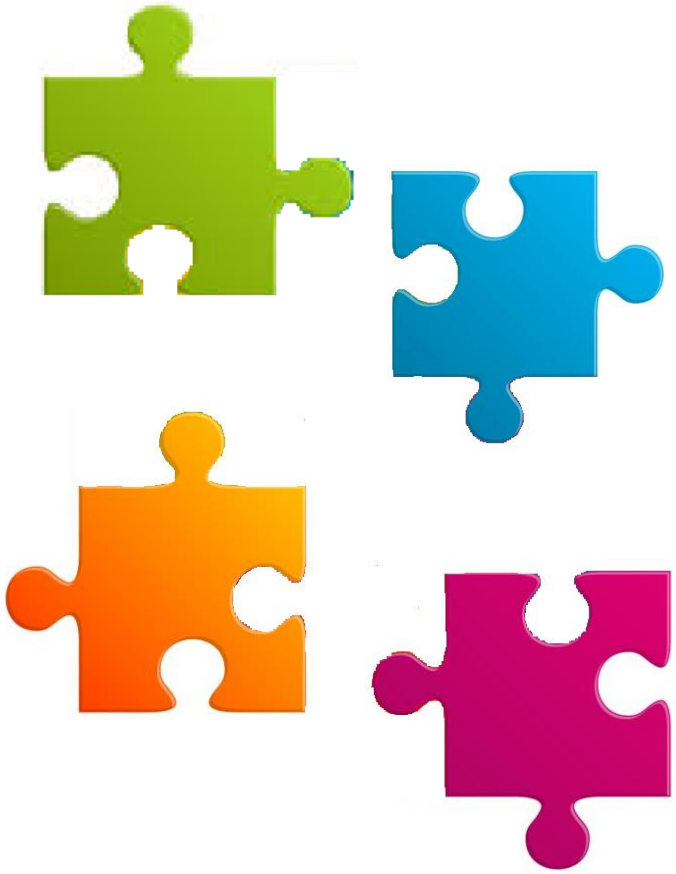
Main steps to make a techno-economic study on how to build a logistic centre in an agro-industry?

DOWNLOAD THE 2nd HANDBOOK

www.sucellog.eu

Expected impacts

4 agro-industries logistic centres created. Direct technical support to 44 European agro-industries starting new agro-industry logistic centres. More than 1320 advice services provided to the agrarian sector.



15 regional and 4 national skilled teams to carry-out auditing and dissemination activities in Spain, France, Italy and Austria. Training of agrarian associations in other 3 countries in EU28

88 workshops and engagement events in participating countries to create awareness about opportunities for the agrarian sector

Elaboration of 3 handbooks and 2 technical guidelines to provide support beyond the project

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Thank you for your attention !!

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